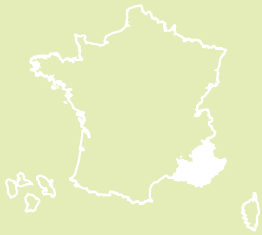


EMMAH

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Direction

Stéphane Ruy: director
Maminirina Joelson, Marc Leblanc: deputy
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Elodie Canchon, Isabelle Le Mouëllic,
Virginie Reynaud: secretaries

Quelques chiffres

- 40 researchers
- 7 engineers
- 4 assistant engineers
- 15 technicians and administrative staff
- PhD students and post-doctoral staff

Mediterranean Environment and Modelling of Agroecosystems

The aim of the scientific project of the unit is to develop tools for analysing and predicting the functional dynamics of Mediterranean ecosystems at landscape level. The ultimate aim of this research is to quantify the environmental impact of global changes (changes in climate, agricultural practices and land use) on the quantity and quality of subterranean resources, soil degradation and agricultural production potential, principally in the Mediterranean zone. This research focuses on natural and anthropic Mediterranean biotopes.

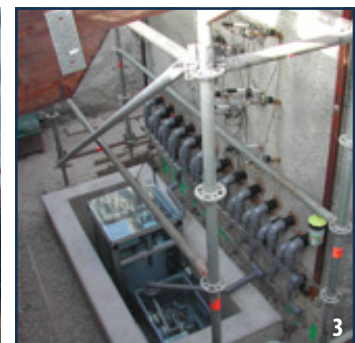
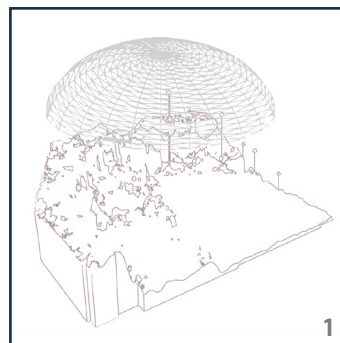
Research themes

- Feedback between water balance, vegetation development and changes in land use in cultivated ecosystems.
- Modelling of mass transport (water, particles, bacteria and viruses) and energy in the aquifer-soil- plant-atmosphere continuum.
- Soil-plant-microflora interactions and modelling of the water and mineral supply to plants.
- Development of sensors and measurement systems for environmental characterisation (including high-throughput phenotyping, estimation of the water content of the soil and subsoil, analysis of structure-transfer relationships).
- Environmental evaluation of the reuse of wastewater in agriculture.

Research objectives

- Prediction of agricultural yields and of the availability of ground water resources as a function of the dynamics of the agriculture-soil-climate environment.
- Optimising water and nutrient resources for crops.

Basic research studies are being carried out to describe the processes involved and their spatial distribution, from local to regional scales. Dynamic models of ecosystem functioning are also being developed. The EMMAH Unit carries out its research within the Adaptation to Global Change Grouping of the INRA Provence-Alpes-Côte d'Azur Centre.



(1) The research of the unit concerns transfers of mass (water, gases, solutes and particles) and energy in the aquifer-soil-plant-atmosphere continuum. (2) The phenomobile: a robot vehicle to characterize automatically crops within experiments. (3) Lysimeter on uncultivated soil, for studies of the transfer of water and pollutants to the aquifer.

